

## CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Snowfall and rainfall are expressed in inches.

**Alabama.**—The mean temperature was 62.2°, or 1.3° below normal; the highest was 91°, at Goodwater on the 28th, and the lowest, 29°, at Maple Grove on the 15th. The average precipitation was 4.12, or 1.00 below normal; the greatest monthly amount, 6.57, occurred at Daphne, and the least, 1.39, at Clanton.—*F. P. Chaffee.*

**Arizona.**—The mean temperature was 64.3°, or 4.7° above normal; the highest was 110°, at Fort Mojave on the 16th, and the lowest, 17°, at Whipple on the 1st. The average precipitation was 0.08, or 0.40 below normal; the greatest monthly amount, 1.00, occurred at Walnut Grove, while none fell at numerous stations.—*W. T. Blythe.*

**Arkansas.**—The mean temperature was 61.5°, or 1.3° below normal; the highest was 90°, at Stuttgart on the 27th, and the lowest, 31°, at Keesees Ferry on the 17th. The average precipitation was 4.14, or 0.78 below normal; the greatest monthly amount, 6.12, occurred at Mount Nebo, and the least, 1.93, at Fulton.—*F. H. Clarke.*

**California.**—The mean temperature was 60.6°, or 2.9° above normal; the highest was 112° at Salton and Volcano Springs on the 16th, and the lowest, 11°, at Bodie on the 9th. The average precipitation was 0.51, or 1.85 below normal; the greatest monthly amount, 3.70, occurred at North Bloomfield, while none fell at numerous stations.—*J. A. Barwick.*

**Colorado.**—The mean temperature was 43.0°, or 1.0 below normal; the highest was 87°, at Lamar on the 20th, and the lowest, 11° below zero, at Pagoda on the 1st. The average precipitation was 1.50, or 0.02 above normal; the greatest monthly amount, 10.50, occurred at Ruby, and the least, trace, at Saguache.—*F. H. Brandenburg.*

**Florida.**—The mean temperature was 70.2°, or 0.5° below normal; the highest was 94°, at Clermont on the 25th, at Earnestville on the 28th, and at Kissimmee on the 8th; the lowest was 37°, at Haywoods on the 11th. The average precipitation was 1.66 above normal; the greatest monthly amount, 10.55, occurred at Lemon City, and the least, 1.47, at Orange City.—*A. J. Mitchell.*

**Georgia.**—The mean temperature was 62.7°, or 0.8° below normal; the highest was 95°, at Belleville on the 28th, and the lowest, 27°, at Diamond on the 11th. The average precipitation was 3.81, or 0.15 above normal; the greatest monthly amount, 11.65, occurred at Clayton, and the least, 2.20, at Brag.—*J. B. Marbury.*

**Idaho.**—The mean temperature was 43.9°, or 3.1° above normal; the highest was 90°, at Payette on the 20th, and the lowest, 6°, at Lake on the 1st. The average precipitation was 1.02, or 0.66 below normal; the greatest monthly amount, 2.40, occurred at Murray, and the least, 0.02, at Burnside.—*D. P. McCallum.*

**Illinois.**—The mean temperature was 50.4°, or 1.6 below normal; the highest was 85°, at Albion on the 24th, and the lowest, 18°, at Dwight on the 20th. The average precipitation was 4.26, or 0.71 above normal; the greatest monthly amount, 8.31, occurred at Cobden, and the least, 1.88, at Ottawa and Streator.—*C. E. Linney.*

**Indiana.**—The mean temperature was 50.7°, or 2.0° below normal; the highest was 90°, at Salem on the 28th, and the lowest, 13°, at La Porte on the 20th. The average precipitation was 4.33, or 0.77 above normal; the greatest monthly amount, 9.93, occurred at Vincennes, and the least, 0.99, at Hammond.—*C. F. R. Wappenhans.*

**Iowa.**—The mean temperature was 47.9°, or about normal; the highest was 89°, at Fonda on the 23d and 27th, and the lowest, 19°, at Larabee on the 19th. The average precipitation was 5.35, or 2.75 above normal; the greatest monthly amount, 9.86, occurred at Winterset, and the least, 2.22, at Northwood.—*G. M. Chappel.*

**Kansas.**—The mean temperature was 53.6°, or 2.2° below normal; the highest was 96°, at Meade on the 18th, and the lowest, 23°, at Coolidge and Goodland on the 14th. The average precipitation was 3.69, or 1.32 above normal; the greatest monthly amount, 7.17, occurred at Atchison, and the least, 1.35, at Paola.—*T. B. Jennings.*

**Kentucky.**—The mean temperature was 55.5°, or 1.3° below normal; the highest was 90° at Alpha on the 28th, and the lowest, 25°, at Eubank on the 10th and at Owenton on the 20th. The average precipitation was 6.03, or 1.67 above normal; the greatest monthly amount, 9.97, occurred at Canton, and the least, 2.96, at Carrollton.—*Frank Burke.*

**Louisiana.**—The mean temperature was 66.6°, or 2.1° below normal; the highest was 90°, at Donaldsonville on the 4th and 5th, and at Rayne on the 7th; the minimum was 34°, at Davis on the 17th. The average precipitation was 4.81, or 0.72 above normal; the greatest monthly

amount, 12.40, occurred at Abbeville, and the least, 1.26, at Sugar-town.—*R. E. Kerkam.*

**Maryland and Delaware.**—The mean temperature was 52.0°, or 0.4° above normal; the highest was 94°, at Taneytown on the 25th, and the lowest, 15°, at Sunnyside on the 20th. The average precipitation was 2.94, or 0.77 below normal; the greatest monthly amount, 5.06, occurred at Sunnyside, and the least, 2.00, at Solomons.—*G. E. Hunt.*

**Michigan.**—The mean temperature was 42.1°, or 2.0° below normal; the highest was 80°, at Allegan and Berrien Springs on the 28th, and the lowest, zero, at Newberry on the 19th. The average precipitation was 2.87, or 0.56 above normal; the greatest monthly amount, 5.90, occurred at Gladwin, and the least, 0.88, at Romeo.—*C. F. Schneider.*

**Minnesota.**—The average temperature was 43.7°, or 0.8° below normal; the highest was 92°, at Milaca on the 24th, and the lowest, 3° below zero, at Tower on the 19th. The average precipitation was 1.55, or 1.50 below normal; the greatest monthly amount, 3.54, occurred at Pleasant Mounds.—*T. S. Outram.*

**Mississippi.**—The mean temperature was 64.1°, or 0.6° below normal; the highest was 94°, at Fayette on the 24th and at Thornton on the 21st, and the lowest, 30°, at Corinth on the 18th and at French Camp on the 10th. The average precipitation was 2.87, or 3.56 below normal; the greatest monthly amount, 8.75, occurred at Bay St. Louis, and the least, 1.20, at Mayersville.—*R. J. Hyatt.*

**Missouri.**—The mean temperature was 54.2°, or 0.8° below normal; the highest was 88°, at Marshal on the 27th, and the lowest, 21°, at Potosi on the 17th. The average precipitation was 4.55, or 0.79 above normal; the greatest monthly amount, 8.21, occurred at Boonville, and the least, 1.20, at Emma.—*A. E. Hackett.*

**Montana.**—The mean temperature was 45.0°, or 1.0° above normal; the highest was 94°, at Glendive on the 26th, and the lowest, 7°, at Monarch on the 6th. The average precipitation was 1.05, or 0.13 below normal; the greatest monthly amount, 4.15, occurred at Fort Benton, and the least, 0.20, at Chinook and Manhattan.—*R. M. Crawford.*

**Nebraska.**—The mean temperature was 47.8°, or 2.2° below normal; the highest was 90°, at Brokenbow on the 17th and at Whitman on the 26th; the lowest was 8°, at Kimball on the 7th. The average precipitation was 3.82, or 1.41 above normal; the greatest monthly amount, 8.72, occurred at Wilber, and the least, 0.40, at Fort Robinson.—*G. A. Loveland.*

**Nevada.**—The mean temperature was 47.3°, or 0.5° above normal; the highest was 91°, at Downeyville on the 16th, and the lowest, 9°, at Gold Creek on the 7th. The average precipitation was 0.37, or about half the usual amount; the greatest monthly amount, 1.44, occurred at Crane's Ranch, while none fell at Mill City and Wadsworth.—*R. F. Young.*

**New England.**—The mean temperature was 46.1°, or 2.1° above normal; the highest was 88°, at Stratford, N. H., on the 25th, and the lowest, 3°, at Flagstaff, Me., on the 1st. The average precipitation was 2.97, or 0.02 below normal; the greatest monthly amount, 5.95, occurred at Vineyard Haven, Mass., and the least, 1.60, at Plymouth, N. H.—*J. W. Smith.*

**New Jersey.**—The mean temperature was 50.4°, or 0.7° above normal; the highest was 89°, at Beverly on the 25th, and the lowest, 19°, at Somerville on the 21st. The average precipitation was 3.79, or 0.43 above normal; the greatest monthly amount, 6.98, occurred at Staffordville, and the least, 2.17, at Egg Island.—*E. W. McGann.*

**New Mexico.**—The mean temperature was slightly below normal; the highest was 95°, at San Marcial on the 17th, and the lowest, 1°, at Gold Hill on the 9th. The average precipitation was about normal, but was very unevenly distributed; the greatest monthly amount, 2.20, occurred at Gold Hill, but none fell at Deming, Galisteo, and Lordsburg.—*H. B. Hersey.*

**New York.**—The mean temperature was 45.2°, or 1.5° above normal; the highest was 87°, at Port Jervis on the 25th, and the lowest, 3°, at Little Falls on the 19th. The average precipitation was 2.47, or 0.05 below normal; the greatest monthly amount, 4.90, occurred at Brentwood, and the least, 0.68, at Cortlandt.—*R. M. Hardinge.*

**North Carolina.**—The mean temperature was 57.6°, or 0.3° below normal; the highest was 91°, at Greensboro on the 30th, and the lowest, 22°, at Linville on the 21st. The average precipitation was 3.68, or 0.10 below normal; the greatest monthly amount, 10.57, occurred at Lynn, and the least, 0.98, at Edenton.—*C. F. Von Herrmann.*

**North Dakota.**—The mean temperature was 40.8°, or 0.6° below normal; the highest was 93°, at Power on the 27th, and the lowest, 7°, at Fargo on the 2d. The average precipitation was 1.01, or 1.67 below normal; the greatest monthly amount, 3.25, occurred at Fort Yates, and the least, trace, at Bordulac and Power.—*B. H. Bronson.*

**Ohio.**—The mean temperature was 49.3°, or 1.2° below normal; the highest was 92°, at Portsmouth on the 28th, and the lowest, 11°, at Ridgeville Corners on the 20th. The average precipitation was 3.27, or 0.30 above normal; the greatest monthly amount, 5.69, occurred at

Wauseon, and the least, 1.28, at St. Ignatius College (Cleveland).—*H. W. Richardson.*

*Oklahoma.*—The mean temperature was 59.9°, the highest was 97°, at Norman on the 20th, and the lowest, 28°, at Pond Creek on the 9th. The average precipitation was 5.38; the greatest monthly amount, 13.35, occurred at Edmonton, and the least, 0.80, at Fort Sill.—*J. I. Widmeyer.*

*Oregon.*—The mean temperature was 51.8°, or 4.0° above normal; the highest was 100°, at Vernonia on the 25th, and the lowest, 10°, at Fort Klamath on the 2d. The average precipitation was 1.84, or 1.95 below normal; the greatest monthly amount, 5.50, occurred at Government Camp, and the least, 0.15, at P. Ranch.—*B. S. Pague.*

*Pennsylvania.*—The mean temperature was 49.0°, or 1.1° above normal; the highest was 92°, at Gettysburg on the 25th, and the lowest, 12°, at Blooming Grove on the 20th. The average precipitation was 3.30, or 0.50 below normal; the greatest monthly amount, 4.63, occurred at Uniontown, and the least, 1.20, at Easton.—*T. P. Townsend.*

*South Carolina.*—The mean temperature was 62.2°, or 0.6° below normal; the highest was 95°, at Gillisonville on the 28th, and the lowest, 31°, at Walhalla on the 17th. The average precipitation was 3.24, or 0.10 above normal; the greatest monthly amount, 8.40, occurred at Walhalla, and the least, 1.41, at Gillisonville.—*J. W. Bauer.*

*South Dakota.*—The mean temperature was 44.7°, or 1.0° below normal; the highest was 91°, at Aberdeen and Mellette on the 27th, and the lowest, 10°, at Fort Meade on the 1st. The average precipitation was 2.95, or 0.40 above normal; the greatest monthly amount, 6.13, occurred at Greenwood, and the least, 0.60, at Farmingdale.—*S. W. Glenn.*

*Tennessee.*—The mean temperature was 58.1°, or 1.5° below normal; the highest was 88°, at Springdale on the 24th, at St. Joseph on the 27th, and at Byrdstown on the 28th; the lowest was 25°, at Erasmus on the 10th. The average precipitation was 6.18, or 1.83 above normal; the greatest monthly amount, 9.41, occurred at McKenzie, and the least, 2.84, at Elizabethton.—*H. O. Bate.*

*Texas.*—The mean temperature was 1.6° below normal; there was a general deficiency, except in the vicinity of Camp Eagle Pass and El Paso, where there was an excess of 1.9° and 0.5°, respectively; the deficiency ranged from 0.8° to 2.5° over northern and eastern sections, from 1.1° to 3.6° over central and southwest sections, and from 0.1° to 4.9° over the coast district, with the greatest deficit in the vicinity of Cuero; the highest was 101°, at Camp Eagle Pass on the 5th, and

the lowest, 26°, at Valentine on the 1st. The average precipitation was 0.98 below normal; there was a general deficiency, except over the western part of the southwest section, the Panhandle, and in the vicinity of Luling and Cuero, where there was an excess ranging from 0.18 to 3.45, with the greatest at Luling; the deficiency ranged from 0.61 to 2.96 over northern and eastern sections, from 0.57 to 2.98 over central section, and from 0.06 to 3.14 over the coast district and the eastern part of southwest section, with the greatest excess in the vicinity of Houston; the greatest monthly amount, 5.70, occurred at Luling, while none fell at Dean, Midland, and Valentine.—*I. M. Oline.*

*Utah.*—The mean temperature was 47.0°; the highest was 93°, at St. George on the 16th, and the lowest, 6°, at Koosharem on the 1st. The average precipitation was 0.89; the greatest monthly amount, 3.25, occurred at Pahreah, and the least, trace, at Frisco.—*J. H. Smith.*

*Virginia.*—The mean temperature was 53.9°, or 2.0° below normal; the highest was 95°, at Farmville on the 23d, and at Bonair on the 25th, and the lowest, 18°, at Monterey on the 20th. The average precipitation was 2.08, or 0.95 below normal; the greatest monthly amount, 4.90, occurred at Guinea, and the least, 0.15, at Bedford City.—*E. A. Evans.*

*Washington.*—The mean temperature was 51.0°, or 3.4° above normal; the highest was 94°, at Chehalis on the 10th, and the lowest, 18°, at Cascade Tunnel on the 1st. The average precipitation was 1.68, or 1.84 below normal; the greatest monthly amount, 7.61, occurred at Tatoosh, and the least, trace, at Sunnyside.—*G. N. Salisbury.*

*West Virginia.*—The mean temperature was 51.5°, or about normal; the highest was 90°, at Hewett on the 28th, and the lowest, 19°, at White Sulphur Springs on the 19th and 20th. The average precipitation was 2.97, or slightly below normal; the greatest monthly amount, 7.10, occurred at Philippi, and the least, 1.58, at Bluefield.—*H. L. Ball.*

*Wisconsin.*—The mean temperature was 43.9°, or 1.5° below normal; the highest was 87°, at Osceola Mills on the 23d, and the lowest, 10°, at Crandon on the 19th, and at Spooner on the 1st. The average precipitation was 2.43, or 0.60 below normal; the greatest monthly amount, 4.89, occurred at Hartland, and the least, 0.10, at Spooner.—*W. M. Wilson.*

*Wyoming.*—The mean temperature was 42.1°, or 2.0° above normal; the highest was 86°, at Carbon on the 19th, and the lowest, 2°, at Wise on the 4th. The average precipitation was 0.89, or 0.90 below normal; the greatest monthly amount, 1.67, occurred at Sundance, and the least, 0.50, at Green River.—*M. G. Renoe.*

## RIVER AND FLOOD SERVICE.

By PARK MORRILL, Forecast Official, in charge of River and Flood Service.

The highest and lowest water, mean stage, and monthly range at 118 river stations are given in the following table. Hydrographs for typical points on seven principal rivers are shown on Chart VI. The stations selected for charting are: Keokuk, St. Louis, Cairo, Memphis, and Vicksburg, on the Mississippi; Cincinnati, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

The flood in the lower Mississippi continued throughout April. At Cairo the river remained in high flood during the first half of the month, falling but 2 feet, but during the latter half it declined rapidly and reached the danger line on the 28th. At Memphis there was a very slow but steady fall during the entire month; the total change was only 2½ feet, and the water was still slightly above danger line on the 30th. The stage at Vicksburg was practically constant at its maximum during the latter half of the month, while at New Orleans a very slow but steady rise was still in progress at the close of the month.

At Memphis the height of the river during the present flood exceeded all previous records by 1.5 foot, and that in spite of vast overflows from the river through crevasses in the levees. A considerably higher stage would have been reached had the levees held. The river attained its maximum of 37.1 feet on March 20, at which point its rise was checked through the breaking of the levees near Nodena on the 19th. The rise continued at Cairo for a full week longer, and would probably have lasted at Memphis for ten days, except for the water

taken from the river through the crevasses. At the time the levees broke the daily rise was about 0.4 foot.

The river at Vicksburg continued to rise until the 16th, when a stage of 52.3 feet was reached, 1.2 foot in excess of the previous high-water record. At New Orleans a stage of 19.3 feet had been reached at the close of the month, 1.4 foot higher than any water known before.

The Ohio was low during the early part of the month, rose to a good boating stage during the middle of the month, and again fell to a low stage at its close. The Tennessee continued in flood during the first half of April and was the chief agent in maintaining the Mississippi flood. The upper Mississippi was in moderate flood most of the month and the Missouri rose to a flood stage at its close. This resulted in moderately high water at St. Louis, which rose to danger line on the last day of the month.

The following résumé of river stages and conditions of navigation in the respective streams is compiled from reports by the officials of the Weather Bureau at various river stations and section centers:

*Hudson River.* (Reported by A. F. Sims, Albany, N. Y.)—The Hudson River was at its normal height on the first of the month and so continued up to the morning of the 7th. A 14-inch rise was noted at Albany on the 8th, so that comparatively deep water was to be found along the river front. The river continued to rise steadily during the 9th, and on the morning of the 10th the water was within 2 feet of the stringpiece of the bulkhead. A cold wave over the watershed of the Hudson on the night of the 10th was very effective in checking the flow of surface water, and by the morning of the 11th a fall of 12 inches was noted. The turbidity of the water caused companies pumping from the river to shut down during the first ten days of April.